

**AMENDMENTS TO THE SPECIFICATION:**

Please replace the paragraph [0015] at page 5, with the following rewritten paragraph:

The present invention generally relates to Applicants' co-pending patent applications: U.S. Patent Application No. 10/729,596, entitled "TIMING SOFT ERROR CHECK", Attorney Docket No. 033994-003; U.S. Patent Application No. 10/729,785, entitled "GLITCH AND METASTABILITY CHECKS USING SIGNAL CHARACTERISTICS", Attorney Docket No. 033994-005; and U.S. Patent Application No. 10/729,701, entitled "VERIFICATION AND CHARACTERIZATION OF NOISE MARGIN IN INTEGRATED CIRCUIT DESIGNS", Attorney Docket No. 033994-006, filed concurrently herewith and the entire contents of each application are incorporated herein by reference.

Please replace the paragraph [0017] at page 6, with the following rewritten paragraph:

In step 3006, the current minimum OP and the current maximum OP are compared to determine if they both fail or succeed. Specifically, if both the current maximum OP and the current minimum OP both indicate the same status (both succeed or both fail), then the process proceeds to step 3007 where the process ends because of a same sign error. However, if both the current minimum OP and the current maximum OP do not indicate the same status, then the process proceeds to step 3008 where other reliability checks on the circuit may be performed. Specifically, the user has the option of performing glitch and metastability checks C1 – C7 as described in applicant's co-pending patent application No. 10/729,785, entitled "GLITCH AND METASTABILITY CHECKS USING SIGNAL CHARACTERISTICS", Attorney Docket No. 033994-005, the contents of which are incorporated herein by reference.

Please replace the paragraph [0012] at page 4, with the following rewritten paragraph:

~~FIG. 1 is~~ FIGS. 1a-1b show a flowchart illustrating how to determine an optimized parameter for a circuit simulation.

Please replace the paragraph [0013] at page 4, with the following rewritten paragraph:

Various aspects will now be described in connection with exemplary embodiments, including certain aspects described in terms of sequences of actions that can be performed by elements of a computer system. For example, it will be recognized that in each of the embodiments, the various actions can be performed by specialized circuits or circuitry (e.g., discrete and/or integrated logic gates interconnected to perform a specialized function), by program instructions being executed by one or more processors, or by a combination of both. Thus, the various aspects can be embodied in many different forms, and all such forms are contemplated to be within the scope of what is described. The instructions of a computer program as illustrated in ~~FIG. 4~~ FIGS. 1a-1b for characterizing a circuit can be embodied in any computer readable medium for use by or in connection with an instruction execution system, apparatus, or device, such as a computer based system, processor containing system, or other system that can fetch the instructions from the instruction execution system, apparatus, or device and execute the instructions.

Please replace the paragraph [0016] at page 5, with the following rewritten paragraph:

Referring now to the drawings wherein the showings are for purposes of illustrating preferred embodiments of the present invention only, and not for purposes of limiting the same, ~~Figure 4 is~~ FIGS. 1a-1b show a flowchart illustrating a method of determining an optimized parameter for a circuit simulation. In step 3001, critical-path circuits of full circuits for the circuit simulations are determined for the bisection procedure. The range and precision of the bisection procedure and clock cycle timing need to be decided. In step 3002, the circuit is simulated based upon an initial optimization parameter (OP). For the reliability based characterization illustrated in ~~Figure 4~~ FIGS. 1a-1b, the OP is the setup time or hold time for the circuit. The initial minimum and maximum OP's are determined by user specified information. In step 3003, the primary criteria parameter (PCP) is calculated for the

initial minimum OP. The PCP is the bisection error for the setup time or hold time. Once the PCP is calculated, then the circuit is simulated in step 3004 for the initial maximum optimization parameter (OP). In step 3005, the current PCP is then calculated for the initial maximum OP.